

Applicant: Vilho Nissinen et al.  
Application No.: 10/529,516  
Response to Office action mailed Mar. 3  
Response filed May 19, 2009

### Remarks

Claims 11–27, and 33–38 remain pending in the application. In the Office action dated Mar. 3, 2009, claims 11–13, 19–20, 27 and 33 were rejected as anticipated by Brooks et al. (US 4,282,533). Claims 14–26 and 34–38 were rejected as obvious over Brooks et al., and claims 11–27 and 33–38 were rejected as obvious over Bernert et al. (US 6,063,450).

The courtesy extended to applicant's representative by Examiner Yewebdar Tadesse in the telephone interview conducted May 14, 2009, is acknowledged with appreciation. During the interview DE 3 339 222, and US 3,843,055 were discussed as showing basic airless nozzle technology. During the interview an amended claim 11, and original claim 33 were discussed. These claims are directed to a preliminary nozzle which acts as a diffuser to a secondary nozzle similar to that shown in DE 3 339 222 to form an arrangement wherein abrasive coating materials change the flow volume of the secondary nozzles more slowly which allows longer periods of time between nozzle changes during which the flow volume can be maintained constant by adjusting the coating feed pressure. FIG. 1 was discussed with the consideration that the secondary nozzle 1 is connected to the preliminary nozzle 2, as described in the specification, (paragraphs [0014], and [0017]). FIG. 2 was discussed as showing the results of a study, from which the specification indicates that the wear rate of the coating spray nozzle can be stabilized by using a preliminary nozzle orifice which is 1.1 times or less the area of the secondary flow orifice. General agreement was reached that invention is present in the combination of two nozzles, but with the examiner indicating that the claims should be clear that the preliminary nozzles are connected to the secondary nozzles, and should indicate the structure defining the closed tip of the secondary nozzle.

Claim 11 has been amended to include primary nozzles which start from an orifice which leads into an expanding duct which is connected to the tapered duct of the second nozzles, which leads into the secondary nozzle orifices. Claims 11 and 33 have been amended to better emphasize that preliminary nozzles are connected to the secondary nozzles, and the structures of the secondary nozzles which taper to a tip in which is formed the secondary nozzle orifices. Dependent claims have been amended for greater clarity and

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consistency with the independent claims.

The claims distinguish over the prior art in showing an array of nozzles used for spray coating a moving web, wherein preliminary nozzles are arranged with an orifice leading to an expanding duct, which is connected to a tapered duct which leads to a secondary orifice. Dependent claims claim the particularities on the nozzle orifices, particularly that the preliminary nozzle orifices are at most 1.1 times the area of the secondary nozzle orifices (claims 22, 22, 25, 26, 35, 37). This ratio of primary to secondary nozzle orifice areas results in reduced wear of the secondary nozzle orifices. There is no suggestion within the art of record of combining nozzles of the claimed arrangement to reduce wear of a coating spray nozzle.

Applicant believes that no new matter has been added by this amendment.

Applicant submits that the claims, as amended, are in condition for allowance.  
Favorable action thereon is respectfully solicited.

Respectfully submitted,



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May 19, 2009 (4:10pm)